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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/319,670 06/17/99 SETOGUCHI

R 108A-2851-PC

EXAMINER

TM02/1106

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QUILLEN, A

ART UNIT

PAPER NUMBER

2671

DATE MAILED:

11/06/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

**Office Action Summary**

Application No.

09/319,670

Applicant(s)

SETOGUCHI, RYOZO

Examiner

Allen E. Quillen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-6 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.                      6) ☐ Other:

## DETAILED ACTION

Claims 1-3 have been cancelled, while claims 4-6 are pending.

### *Drawings*

#### INFORMATION ON HOW TO EFFECT DRAWING CHANGES

**1. Correction of Informalities -- 37 CFR 1.85**

New formal drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the Notice of Allowability. Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136(a) or (b) for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

**2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.**

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

#### **Timing of Corrections**

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.185(a). Failure to take corrective action within the set (or extended) period will result in **ABANDONMENT** of the application.

*Claim Objections*

1. Claims 4-6 are objected to because of the following informalities: the multiple uses of alternative language, i.e, the term “..and/or..”, renders the claims uncertain with respect to the scope of each claim. Interpreting to the broadest meaning of the claimed invention, the Examiner presumes the term “...and/or...” means that either case is appropriate or that both cases are appropriate. Appropriate correction is required.

*Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being a hybrid type claim, claiming multiple categories. Both a product of manufacture, i.e., an apparatus (“..a parallel processing device for generating a shape...” ) and a process of using a product, i.e, a method (“...and a process by said shape engine..”) are described in claim 5. Limit each claim to only one statutory class of invention at one time. (Reference Ex parte Lyell, 17 USPQ2d\_1548 (BPAI 1990)).

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*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,967,392 to Werner, et al.

3. Regarding claim 5, Werner discloses a parallel processing device for generating a shape and/or displaying an image (column 2, lines 20-38; column 3, line 5; column 3, lines 32-46; column 33, line 34), wherein a (“the cube”, column 8, line 9) shape engine (column 7, lines 60, “a structure”, through column 8, lines 1-31) which is a machine that creates and displays a 3D shape and/or a 2D shape is used for a geometric engine and/or a graphic engine, and a process by said shape engine and/or said geometric engine and/or said graphic engine (Figure 1, elements 4, 6, 22, column 7, lines 4-66) is executed according to a parallel and/or sequential processing step; characterized in that each of said engines is operated and controlled based on an organization composing level or a target shape generating level (Figure 1, element 2, column 7, lines 5-6, 9-10) using a geometric relation between a composed triangle or a composing triangle (Figures 6a-b, 7a-b, column 8, lines 1-30; column 15, lines 57-67).

4. Regarding claim 6, as described in claims 5 above, additionally Werner discloses a

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parallel processing device for generating a shape and/or displaying an image comprising: a geometric engine provided with an arithmetic unit (Figure 2, Figure 3, element 6, Figure 5, element 110, column 13, line 58) which operates according to a combinatory relation between a vertex and an edge (Figure 10, column 22, lines 26-31) of a given triangle for geometrically changing data of a 3D shape and/or a 2D shape which are formed by a shape generating machine (column 8, lines 62-67) ; a graphic engine provided with an arithmetic unit which operates according to a combinatory relation between a vertex and an edge of the given triangle for processing and/or displaying data of a 3D shape and/or a 2D shape which are changed by said geometric transforming machine(column 24, lines 23-29; 55-56); characterized in that said geometric engine and/or said graphic engine are/is installed in said parallel processing device (Figures 2, 3, 5, column 3, line 26-36; column 9, lines 48-65 through column 10, lines 1-12).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Werner, and further in view of U.S. Patent 5,771,341 to Huddy and the paper by Sims, "Particle Animation and Rendering Using Data Parallel Computation," Computer Graphics, Vol. 24, Number 4, pp. 405-413, August, 1990.

5. Regarding claim 4, Werner discloses a parallel processing device for generating a shape and or displaying an image (column 2, lines 20-38; column 3, line 5; column 3, lines 32-46; column 33, line 34) wherein a sequential and/or simultaneous parallel process (column 3, lines 26-30) is carried out on a shape engine and/or a geometric engine and/or a graphic engine (Figure 1, elements 2, 4, 6, 22, column 7, lines 4-45), which are displaying machines that create a three dimensional (3D) shape and/or a two dimensional (2D) shape (column 8, lines 62-67), characterized in that  $4^n$  ( $n=0, 1, 2$ , column 11, lines 1-8) each of said engines are provided, wherein  $n$  is a numerical number (column 10, lines 13-15, 64-65) which shows the organization composing level (column 10, line 15-16, "organized in scanlines") and the minimum value is 0.

Werner does not teach the number of processors is a function of the shape generating level of a curved body surface. Huddy discloses 2D and 3D display of curved surfaces at any desired resolution (Abstract; Figure 2, Column 3, lines 41-45, 50-53, lines 64 through column 4, lines 1-12).

Huddy does not teach the number of processors is a function of this detailed level of division of curved body surface. Sims teaches varying the number of processors as a function of the shape depending on the number or data elements for displayed particles (Abstract; page 405, left side, lines 6-8; page 405, right side, lines 1-12; Figure 3, page 409, left side, lines 1-8, 20-22).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to allocate processors according to the level of detail as taught by Sims and Huddy in combination with the organizing composing level as Werner discloses. The motivation for this combination includes (1) "the creation of complex structures and motion from a relatively brief abstract description" (Sims, page 405, left side, lines 21-26), (2) rendering speed is

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approximately proportional to the number of processors, and (3) permits computer animation of complex structure and motion automatically using data parallelism as more powerful, parallel computers become widely available, (Sims, under section labeled "Conclusion," lines 21-22, page 412, left side; lines 25-31). One of ordinary skill in the art of graphics processing would have been motivated to do make these obvious combinations, and it is therefore not patentable.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen E. Quillen whose telephone number is 703 605 1231. The examiner can normally be reached Tuesday-Friday's from 7am to 4:30pm .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached on 703 305 9798.


**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to: 703 872 9314 (for Technology Center 2600 only)**

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

  
**MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600**